

REMARKS

The Office Action of June 16, 2006 has been received and reviewed.

Claims 1-44 are currently pending and under consideration in the above-referenced application, each standing rejected.

Reconsideration of the above-referenced application is respectfully requested.

Rejections under 35 U.S.C. § 102

Claims 1-44 stand rejected under 35 U.S.C. § 102(b) for reciting subject matter that is allegedly anticipated by the subject matter described in U.S. Patent 6,281,470 to Adachi (hereinafter “Adachi”) (U.S. Patent 6,962,289, which is the cited number for Adachi, actually issued to Vatan et al., and is no longer relied upon in rejecting any of the claims of the above-referenced application; *see* Office Action of June 16, 2006, page 2).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

It has been asserted that Adachi teaches a programmable material consolidation apparatus with a selective material consolidation system, a machine vision system, and at least one control element. In reality, the system described in Adachi includes a conventional reticle 53 (which is improperly referred to in Adachi as a “photomask”) and exposure lamp 54 for use in exposing photoresist to form photomask therefrom. Fig. 3; col. 12, lines 23-32. In addition, the system of Adachi includes a microscope 55 and a moveable stage 51 that communicate with an image data processing section 57 and stage control section 52, respectively. *Id.* These features work together so that a substrate 40 carried by the stage 51 may be moved to an appropriate location for very precise alignment with the reticle 53. Col. 12, lines 33-34; col. 12, lines 58-64; col. 13, lines 47-49. When the desired degree of alignment has been achieved, the exposure lamp 54 is turned on so that radiation may pass through the reticle 53 and a section of photoresist on the

substrate 40 may be exposed in a pattern defined by the reticle 53. Col. 13, lines 43-47. Nothing about the exposure itself comprises programmable material consolidation.

It is, therefore, respectfully submitted that Adachi does not anticipate a material consolidation system configured to form an object under control of a program, as required of the apparatus of independent claim 1, as amended and presented herein. Accordingly, under 35 U.S.C. § 102(b), the subject matter to which amended independent claim 1 is directed is allowable over the subject matter described in Adachi.

Claims 2-20 are each allowable, among other reasons, for depending directly or indirectly from amended independent claim 1, which is allowable.

Claim 7 is further allowable since Adachi does not expressly or inherently describe a rotational element associated with a locationally stationary camera. The only such element described in Adachi is an element for rotating a stage 51, 61 by which a substrate is carried.

Claim 8 is additionally allowable because Adachi includes no express or inherent description of a machine vision system that includes a scan element or a camera carried by the scan element. Rather, the only movable element described in Adachi is the stage 51, 61 upon which a substrate is to be disposed.

As for the programmable material consolidation apparatus of independent claim 21, it is respectfully submitted that Adachi neither expressly nor inherently describes that the system disclosed therein includes a camera that is positioned so as to avoid interference with a selectively moveable element of a selective material consolidation system, as recited in independent claim 21, as amended and presented herein. It is, therefore, respectfully submitted that, under 35 U.S.C. § 102(b), Adachi does not anticipate each and every element of amended independent claim 21.

Each of claims 22-30 is allowable, among other reasons, for depending directly or indirectly from amended independent claim 21, which is allowable.

Claim 22 is also allowable since Adachi lacks any express or inherent description of a machine vision system that includes a locationally stationary camera and a field of vision that is at least substantially coextensive with a field of exposure of a selective material consolidation

system. Instead, as shown in Fig. 3 of Adachi, the field of vision of the microscope 55 is not at all coextensive with the field of exposure of the reticle 53.

Claim 28 is further allowable since Adachi does not expressly or inherently describe a rotational element associated with a locationally stationary camera. The only such element described in Adachi is an element for rotating a stage 51, 61 by which a substrate is carried.

With respect to the subject matter recited in independent claim 31, Adachi lacks any express or inherent description of a machine vision system that includes a camera “carried by [a] scan element . . .” Rather, the description of Adachi is limited to a stage 51, 61 that moves in the X and Y directions. *See, e.g.*, col. 12, lines 35-37, and col. 13, lines 47-49, for stage 51; col. 15, lines 3-5 and 17-43, for stage 61. As Adachi does not anticipate each and every element of independent claim 31, it is respectfully submitted that, under 35 U.S.C. § 102(b), the subject matter to which independent claim 31 is directed is allowable over the disclosure of Adachi.

Claims 32-44 are each allowable, among other reasons, for depending directly or indirectly from independent claim 31, which is allowable.

Claim 32 is also allowable because Adachi includes no express or inherent description of a machine vision system that includes a field of vision that is at least substantially coextensive with a field of exposure of a selective material consolidation system. Instead, as shown in Fig. 3 of Adachi, the field of vision of the microscope 55 is not at all coextensive with the field of exposure of the reticle 53.

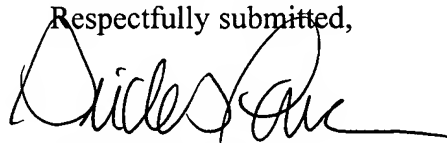
Claim 33 is additionally allowable because Adachi neither expressly nor inherently describes a scan element that positions a camera proximate to a location at which selective material consolidation is to be effected. Rather, in the system of Adachi the reticle 53 and the microscope 55 appear to be positioned at spatially discrete locations.

Withdrawal of the 35 U.S.C. § 102(b) rejections of claims 1-44 is respectfully solicited, as is the allowance of each of these claims.

CONCLUSION

It is respectfully submitted that each of claims 1-44 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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